

## A B S T R A C T

## AN OPTICAL DATA SWITCHING METHOD AND SYSTEM FOR OPTICAL COMMUNICATIONS NETWORKS

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The field of the invention is that of switching optical signals with carrier wavelength conversion capacity, comprising a set of input ports (PE1-PE<sub>n</sub>), a set of output ports (PS1-PS<sub>n</sub>) functionally connected to the input ports so that an input signal presented to one of the input ports may be selectively routed to at least one of the output ports, and wavelength conversion means (34) providing a capacity for converting an input signal carrier wavelength to at least one other output port output wavelength.

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According to the invention the wavelength conversion capacity of said conversion means (34) is limited by at least one of the following three limitation means i) to iii):

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i) for at least one of said output ports (PS), no wavelength conversion may be applied for sending a signal from an input port;

ii) for at least one of said output ports (PS), wavelength conversion may be applied for sending a signal from an input port (PE), but to only a restricted number of wavelength values from the number L of different wavelength values accepted at the input, this restricted number being greater than 0 and less than L, and

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iii) for only a restricted number of output ports (PS) less than the total number of output ports of the switching system, wavelength conversion may be applied for sending a signal from an input port (PE) to any wavelength value from the number L of different wavelength values accepted at the input.

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